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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/307,988	05/10/1999	WILLIAM B. TELFAIR	VISX0011U/US	5573
31518	7590	03/21/2008		
NEIFELD IP LAW, PC 4813-B EISENHOWER AVENUE ALEXANDRIA, VA 22304			EXAMINER SHAY, DAVID M	
			ART UNIT 3735	PAPER NUMBER
			NOTIFICATION DATE 03/21/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 09/307,988	Applicant(s) TELFAIR ET AL.	
	Examiner david shay	Art Unit 3735	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 61-84 and 90-96 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 61-84 and 90-96 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

In view of the Appeal Brief filed on November 29, 2007, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 61-63, 67-75, 77-80, and 90-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Lin in combination with Tang et al. Lin teaches performing corneal sculpting with radiation in the 2.5-3.2 micron range generated by an OPO with pulse width in the 1-40 nsec range. Tang et al teach producing radiation in the range of Lin using a CPM KTP OPO pumped at about 1 micron, the pump thresholds are discussed as 0.5 mJ corresponding to 30 KW power and 17 MW/cm^2 . To produce 0.5 mJ with a 30 KW pulse requires a pulsed width of 17 nanoseconds to produce a power density of 17 MW/cm^2 with 30 KW pulse yields (assuming a circular beam cross section) a beam radius of 562 microns, which is well in excess of eight times the diffraction limit of a multi-mode beam. It would have been obvious to the

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artisan of ordinary skill to employ the OPO of Tang et al in the method of Lin, since this enables effective tuning in the desired range as taught by Tang et al; to employ a mirror that transmits the pump pulse at a forty five degree angle thereto since this does not manipulatively affect the method and is notorious in the art as has been previously set forth; to tune the output to be in the 2.75-3.0 micron range, since Lin gives no indication that this portion of Lin's range should be avoided, since the claimed range is not critical, and since the wavelengths near 3 microns are notoriously useful for surgery, because they are highly absorbed by water – a major component of tissue, official notice of which has already been taken; to increase the power of the pump beam by increasing the energy of the pump, since this increases efficiency, as the power at the harmonic increases as the square of the input power official notice of which has already been taken, and to transmit pump radiation exiting the crystal to a second KTP crystal and interlace the resulting idlers, since these are equivalents, provide no unexpected result, and are known configurations in the art, official notice of which has already been taken thus producing a method such as claimed.

Claims 66 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Lin in combination with Tang et al, as applied to claims 61-63, 67-75, 77-80 and 90-96 and further in view of Davenport et al. Davenport et al teach that increasing the input energy increases the efficiency of the non-linear conversion and is capable of producing repetition rates in the claimed range. It would have been obvious to the artisan of ordinary skill to employ increased input energy and a repetition rate as claimed in the OPO of Tang et al in the method of Lin, since this provides increased conversion efficiency, as taught by Davenport et al and is within the

capability of lasers in the art at the time of the invention, as taught by Davenport et al, thus producing a method such as claimed.

Claims 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Lin in combination with Tang et al as applied to claims 61-63, 65-80, and 85-96 and further in combination with Anthon. Anthon teaches the desirability of employing a multi-mode beam pump beam. It would have been obvious to the artisan of ordinary skill to employ the multi-mode beam pump beam of Anthon, since this enables suppression of stimulated Brillouian scattering (SBS), thus producing a method such as claimed.

Claims 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Bosenberg et al. Lin teaches a method as claimed except for the particular non-linear material. Bosenberg et al teach generating wavelengths in the range desired by Lin using the non-linear material claimed. It would have been obvious to the artisan of ordinary skill to employ an OPO using the non-linear material of Bosenberg in the method of Lin since this can produce the desired wavelengths, is not critical, provides no unexpected result, and does not manipulatively effect the method, thus producing a method such as claimed.

Claims 83 and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Rines. Lin teaches a method as claimed except for the pump wavelength. Rines teaches using a Titanium Sapphire laser to pump KTP to produce mid-infrared radiation in a NCPM OPO. It would have been obvious to use the of OPO of Rines in the method of Lin, since this is not critical, provides no unexpected result, and does not manipulatively affect the method, thus producing a method such as claimed.

Claims 81 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in combination with Bosenberg et al as applied to claim 82 above, and further in view of Mead et al. Mead et al teach the equivalence of periodically poled LiNbO₃ and periodically poled KTP for non-linear wavelength conversion. It would have been obvious to the artisan of ordinary skill to employ periodically poled KTP in the method of Lin and Bosenberg et al, since this produces no manipulative effect and is a recognized equivalent to periodically poled LiNbO₃, as taught by Mead et al, thus producing a method such as claimed.

Applicant argues that Lin et al does not enable one having ordinary skill in the art to produce the claimed invention, pointing to alleged deficiencies in the article cited therein. However, as Lin is an issued U.S.patent, applicant's arguments, drawn to the alleged insufficiencies in an article with a publication date four years prior to the filing date of the application that matured into the Lin patent, during which four years, the level of one having ordinary skill in the art has increased substantially are insufficient to rebut the presumption of validity enjoyed by U.S. Patent 5,520,679. This substantial increase in the knowledge of one having ordinary skill in the art at the time of the invention being evidenced by the teachings of the secondary references wherein the claimed wavelengths are produce with the claimed materials. Thus, the disclosure of Lin, in as much as it describes the claimed embodiments (e.g. claim 10 thereof) is regarded as enabling of applicant's claimed invention. However even assuming, arguendo that the specification of Lin is in some way insufficient to enable one having ordinary skill in the art to produce the claimed method at the time of the invention, any such alleged deficiency is remedied by the teachings of the secondary references combined therewith.

Applicant's arguments filed September 4, 2007 have been fully considered but they are not persuasive. The arguments are not persuasive for the reasons set forth above.

Applicant's arguments with respect to claim 64-66 and 76 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to david shay whose telephone number is (571) 272-4773. The examiner can normally be reached on Tuesday through Friday from 6:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, II, can be reached on Monday, Tuesday, Wednesday, Thursday, and Friday. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/david shay/

Primary Examiner, Art Unit 3735

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A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing
below:

/Charles A. Marmor, II/
Supervisory Patent Examiner
Art Unit 3735